UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Tim Ciarlo, M.S., Entomologist

From: Dee Colby, Ph.D., Entomologist

Secondary Review: Jennifer Saunders, Ph.D., Senior Entomologist

Date: 27-December-2016

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD (DER)

~~**THIS DER DOES CONTAIN CONFIDENTIAL BUSINESS INFORMATION**~~

Note: MRIDs found to be **unacceptable** to support label claims should be removed from the data matrix.

DP barcode: 432821
Decision no.: 512219
Submission no: 984341
Action code: R320
Product Name: Yellow Jacket Nest Killer!
EPA Reg. No or File Symbol: 90354-E
Formulation Type: bait
Ingredients statement from the label with PC codes included:
Fipronil (9.1%) PC: 129121

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m^2 or mg/cm^2 or mg/kg body weight as appropriate): Put 6-8 drops of 0.025% fipronil per bait station with four bait stations per 10,000 ft^2.

Use Patterns: Outdoor bait stations (hanging) to kill yellow jacket colonies/nests; 4 baits stations per 10,000 ft^2 (100'x100').

I. Action Requested: Reviewer requested a product efficacy review of the submitted MRID to determine if the data support product use and kills claims for yellow jackets and yellow jacket nests.

II. Background: Registrant is proposing an R320 for registration of a new product requiring data review to support kills claims for yellow jackets, yellow jacket wasps, wasps and nest claims. One new MRID (49797201), specific to the product, was submitted to support product efficacy claims. An efficacy review dated June 18, 2015 (DP 425700; RDEFFICACY 90354-R 20150618; MRID 49550701) was conducted previously for a prototype of this product and was found deficient during the technical screen for not being product specific and for not including a choice test or controls when testing the bait stations.

III. MRID Summary:

49797201. Matthews, R. and D.H. Dawe (2015) Efficacy studies on yellow jackets (*Vespula* sp.) with 2 Star Solutions, Inc. bait stations in residential areas.

(1) non-GLP

(2) **Methods:** This is a field study. Seven, subterranean *Vespula* spp. nests were located at five residential sites in several towns in Georgia during August 2015. Bait trays for choice tests were prepared with two trays of rehydrated chicken, one untreated and one treated with 8 drops of 0.025% fipronil. Both bait trays were placed into a single transparent hanging container to provide a choice test for foraging yellow jackets. Containers were hung in shaded locations on the sites; height was not specified. Two to six containers were hung per site at ~ 60 ft apart. Determination for the number of containers per site was not specified. Numbers of yellow jacket foragers at nest entrances were recorded for 2 minutes each day over the course of the study; no pretreatment observations were conducted/recorded. At four of the seven nests it was determined that additional bait stations (i.e., containers) were needed, based on nest and trap observations, so additional containers were added during days 2-4 of the study depending on the site. Bait trays were replaced daily for 3-6 days depending on nest activity at each nest entrance. Containers were removed and observations ceased when nest activity reached 0. Two of the sites had 2 nests present, so containers were removed from each of those sites when activity at both nests on a site was 0. Three of the seven nests were excavated to check for internal activity. It was not stated which nests were excavated and at what point after baiting had stopped the nests were excavated. The amount of bait remaining in each tray was recorded daily, along with nest activity and weather conditions. There were no control nests in this study.

(3) **Results:** Numbers of foragers at 3 of the 7 nests were very low throughout the study (i.e., less than 10 individuals/observation). Yellow jackets consumed both fipronil-treated and untreated baits equally, although no statistical data were presented. Authors stated that the three excavated nests showed no activity. The number of yellow jackets entering and leaving nests reached 0 after 3-6 days of treatment with fipronil baits depending on the site.

(4) **Conclusion:** This MRID is **unacceptable** to support kills the nest claims and/or kills yellow jacket wasps. Three of the 7 subterranean nests were excavated to "check internal activity" and "no activity was observed within the nest", but there was no report/description of colony death in the excavated nests. If the lack of activity observed within the excavated nests refers to evidence that the colony had abandoned the nest, as the label states, nests may be abandoned, then abandoned nests would not support kills the nest or "nest killer" claims. Also, the study did not identify which nests were excavated or at what length of time after bait stations were removed that excavations took place. The point at which excavations took place would have been useful information since there was no possibility for verification of a resurgence of nest activity because observations ceased at the point of zero nest activity.

While the Agency prefers that proper controls be included in an efficacy study, the Reviewer realizes that suitable numbers of subterranean *Vespula* nests may be difficult to locate and that controls were not necessary for statistical comparison. However, due to the high degree of variability in sizes of nests (based on activity at nest entrances) used in this study, species identification and observation of activity at bait stations should have been included. Four of the 7 nests showed very low numbers for activity throughout the study compared to the other three nests.

Also, the square footage at each site should have been included to determine the amount of fipronil used at each site and how many bait stations should have been used based on label DFU. Label DFU state to use 4 bait stations per 10,000 ft^2. There were different numbers of bait stations used at different sites within the study, from 2 – 6 bait stations and bait station numbers were increased at days 2-4 on four of the sites "to provide more feeding locations", not due to square footage. However, two of the sites (i.e., Quail Point Run and Vinings Lane) receiving additional bait stations had < 10 individuals at each observation compared to other sites with upwards of 9x higher numbers, so the numbers of individuals observed at nest entrances don't appear to support the need for additional bait stations. In addition, while the proposed label DFU state to replace bait for 5 consecutive days, some study sites received bait for 6 days. Elsewhere on the label it also states that research has shown it could take up to 7 days for colonies to die or abandon the nest. There should be congruency between label DFU, claims and what the data supports for labeling.

The Conclusions section of the study refers to a four-day training period for yellow jackets to find bait stations. There was no indication in the study methods nor on the label that it is necessary to train yellow jackets to visit the bait stations prior to the addition of fipronil.

No aerial nests were tested, and the proposed label does not specify for subterranean nests only. The label refers to yellow jacket, yellow jacket wasps, wasps, yellow jacket nests and wasp colonies; therefore, *Polistes* and *Dolichovespula maculata* should be tested as well.

IV. EXECUTIVE DATA SUMMARY:

(A) While the study shows that *Vespula* spp. subterranean nest activity decreases to 0 during treatment with bait stations containing 0.025% fipronil treated bait, it is not sufficient for kills claims for yellow jackets, yellow jacket wasps, wasps, and/or nest kill claims.

V. LABEL RECOMMENDATIONS:

(1) All Directions for Use as a bait station to treat nests should be deleted. This is the only use on the label.

(2) The following marketing claims are acceptable:

- no claims are supported on the label

(3) The following marketing claims are unacceptable:

- claims suggesting efficacy against yellow jackets, wasps, yellow jacket wasps and/or nests
- nest killer

(4) The following MRIDs should be removed from the data matrix, as they are classified as "unacceptable" to support the product: **49797201**